

BALANCING NATURAL GAS POLICY

Fueling the Demands of a Growing Economy

**Presentation to
California Public Utility Commission
California Energy Commission
Natural Gas Market Outlook 2006-2016 Workshop**

December 9, 2003

NPC

The Study Could Not Be More Timely

National Petroleum Council

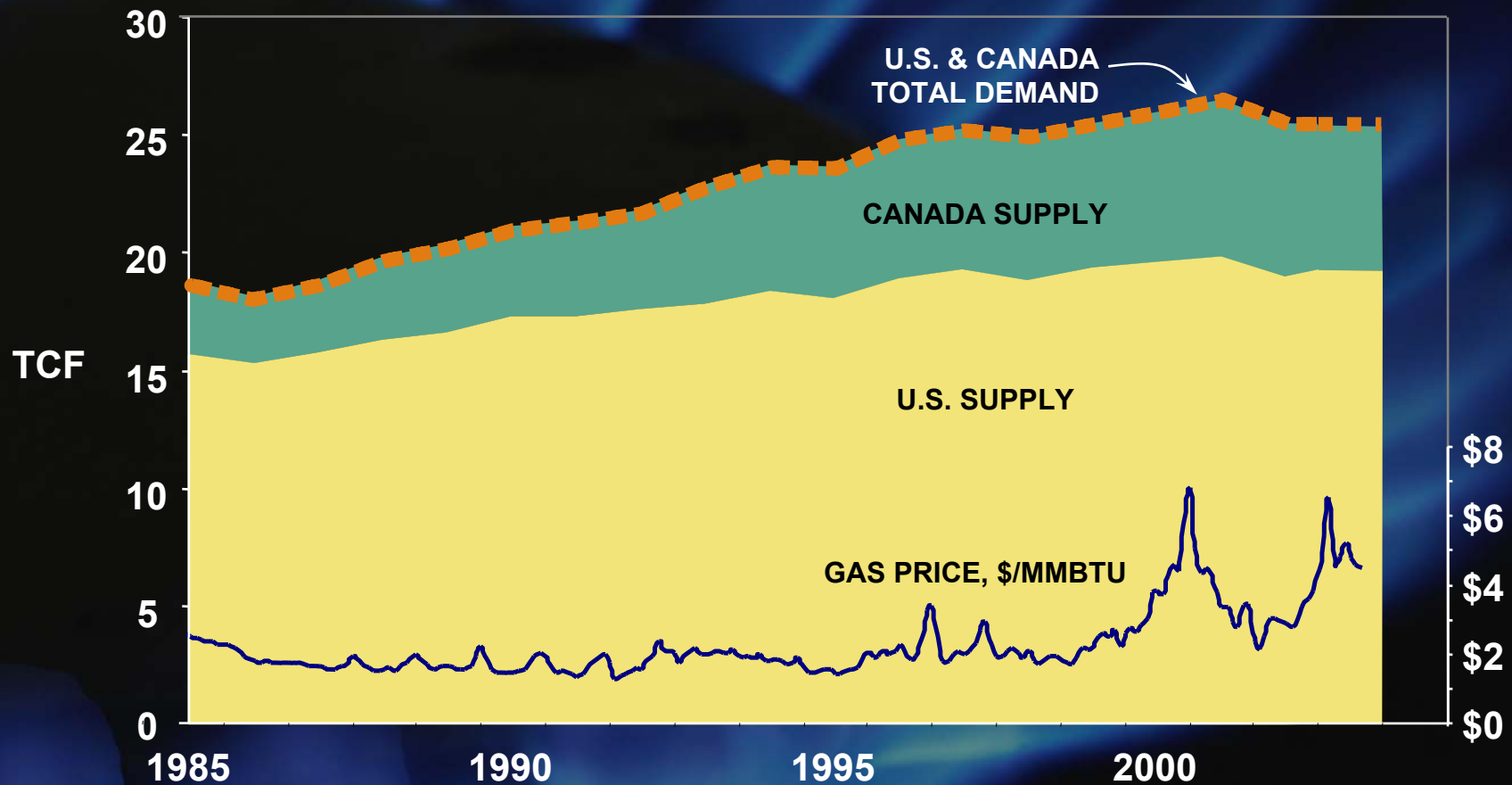
- Federally chartered, privately funded advisory committee
- Sole purpose is to advise and make recommendations to the Secretary of Energy
- Operates under Federal Advisory Committee Act
- Council comprised of ~175 members

Secretary Abraham, March 2002

“Examine the potential implications of new supplies, new technologies, new perceptions of risk, and other evolving market conditions that may affect the potential for natural gas demand, supplies, and delivery through 2025 ... provide insights on energy market dynamics, including price volatility and future fuel choice, and an outlook on the longer-term sustainability of natural gas supplies ... advice on actions that can be taken by industry and Government to increase the productivity and efficiency of North American natural gas markets and to ensure adequate and reliable supplies of energy for consumers.”

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Higher Prices Reflect a Fundamental Shift in Supply & Demand



The NPC Considered Two Paths Beyond the Status Quo

Reactive Path

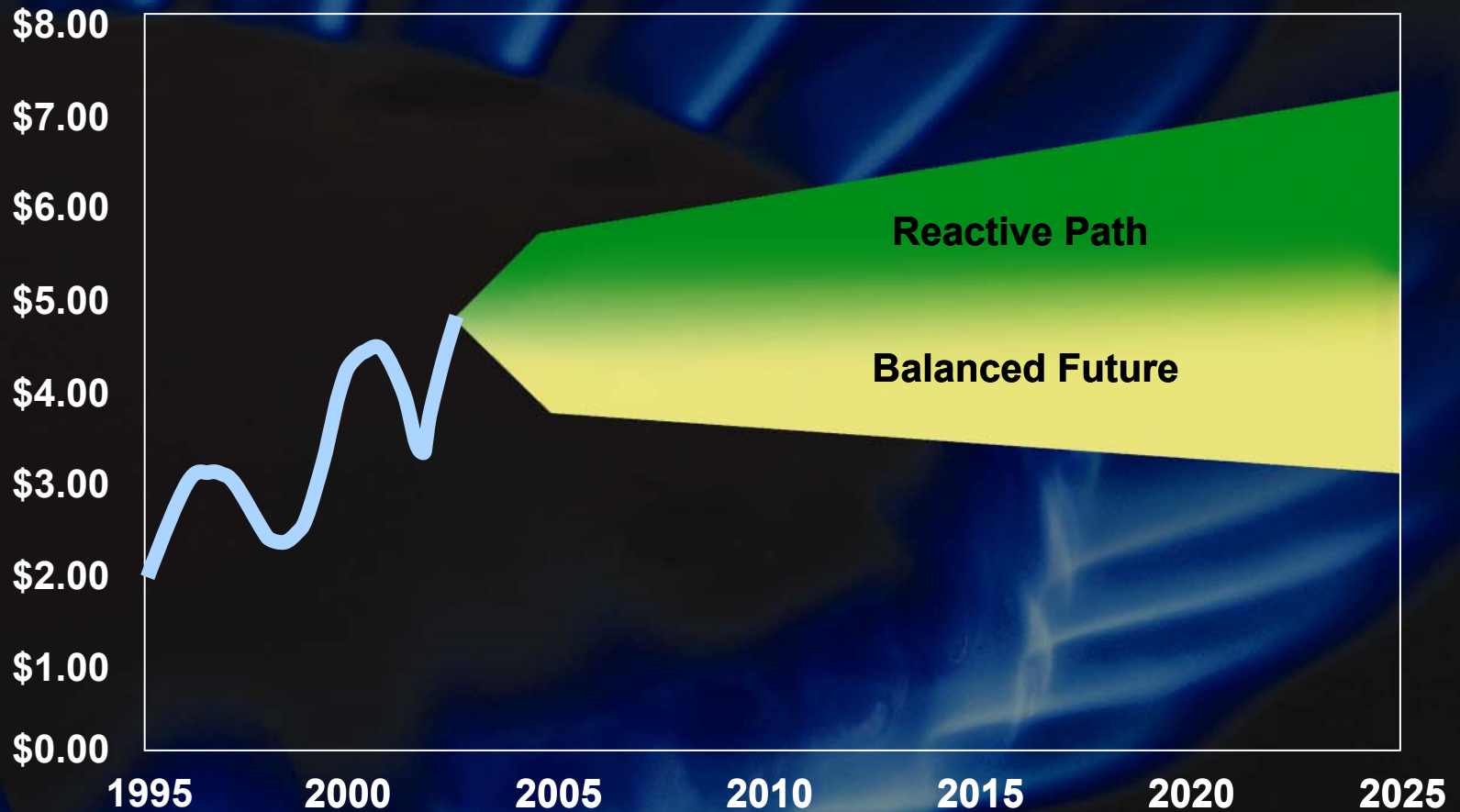
Public policies remain in conflict, encouraging consumption while inhibiting supply ... resulting in higher prices and volatility

Balanced Future

Public policies aligned: alternate fuels and new natural gas supply sources compete to ensure lowest consumer cost

Potential Price Range

Annual Average Henry Hub Prices, \$/MMBTU (\$2002)



Findings on Natural Gas Demand

Greater energy efficiency and conservation are vital near-term and long-term mechanisms for moderating price levels and reducing volatility

Power generators and industrial consumers are more dependent on gas-fired equipment and less able to respond to higher gas prices by utilizing alternate sources of energy

Gas consumption will grow, but such growth will be moderated as the most price-sensitive industries become less competitive, causing some industries and associated jobs to relocate outside North America

Recommendations on Natural Gas Demand

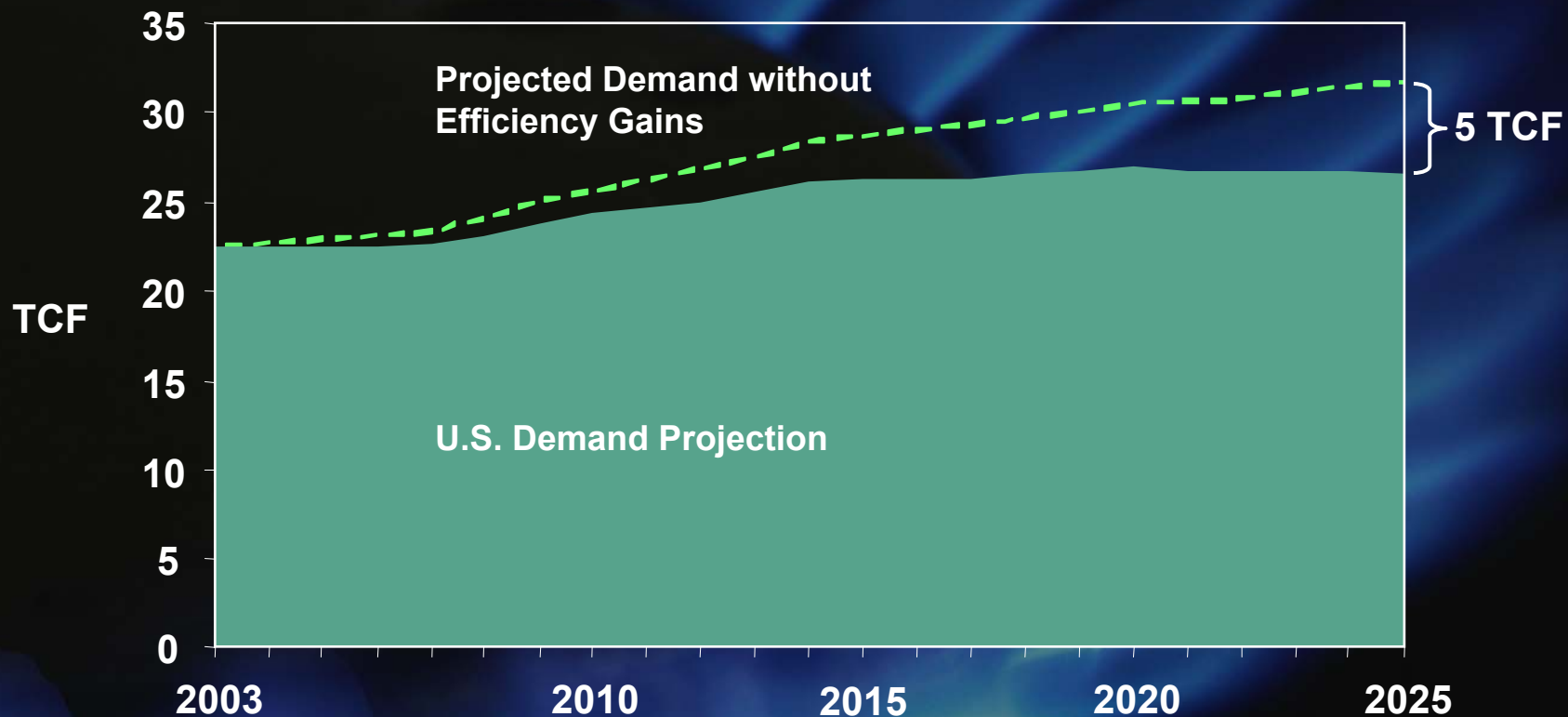
Conservation and Energy Efficiency

Encourage Increased Efficiency and Conservation through Market-Oriented Initiatives and Consumer Education

Alternate Fuel Capability

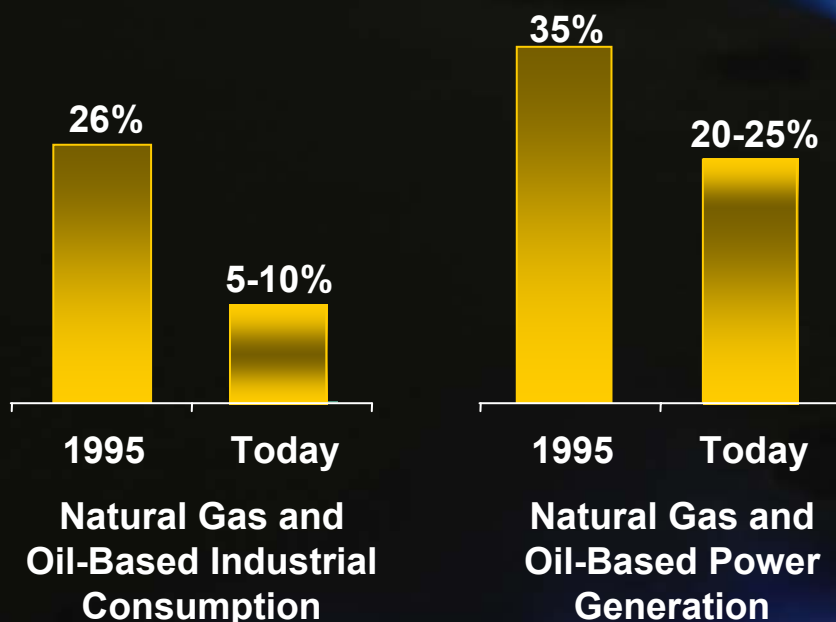
Increase Industrial and Power Generation Capability to Utilize Alternate Fuels

Continued Energy Efficiency is Important

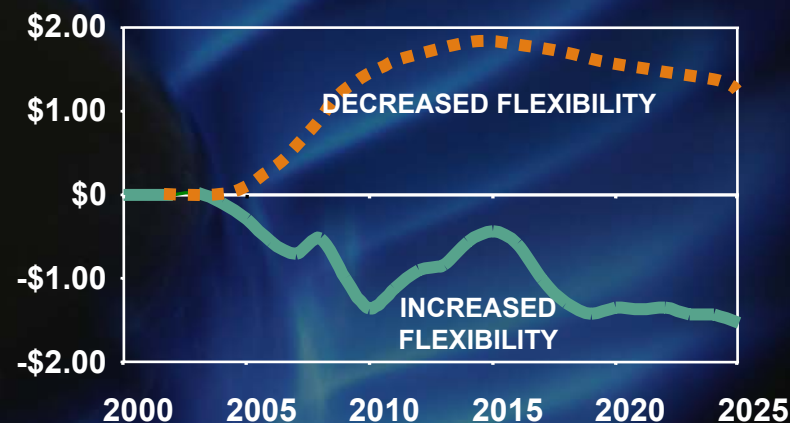


As Demand Has Grown, Flexibility Has Eroded

Fuel Substitution Capability



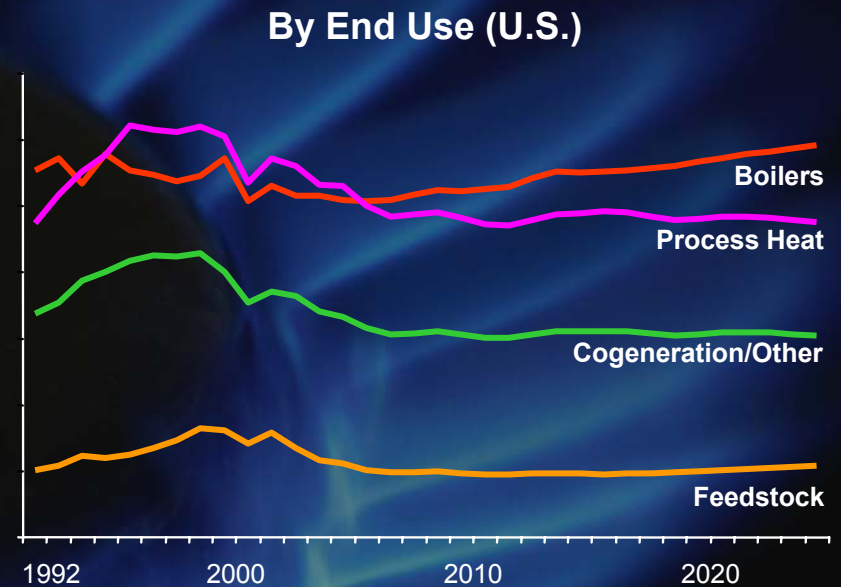
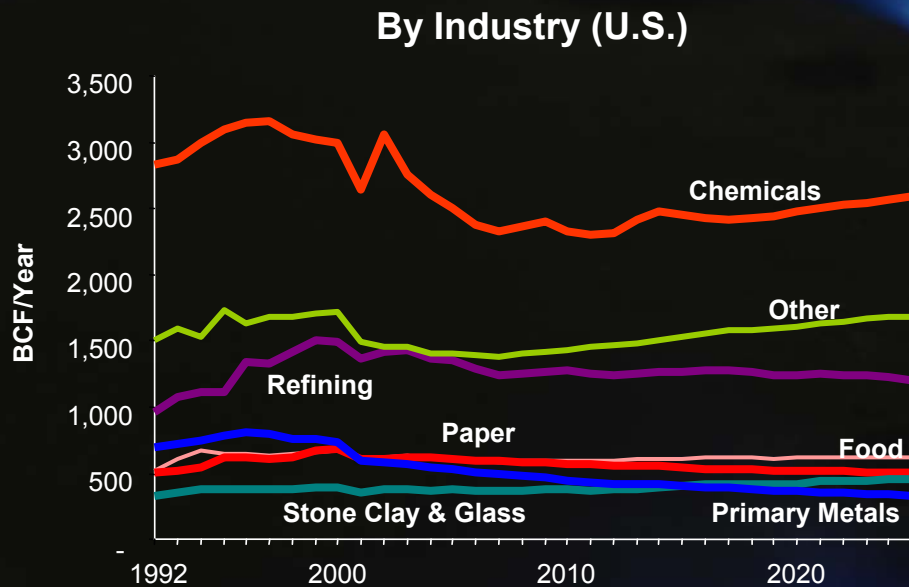
Future Impact of Flexibility



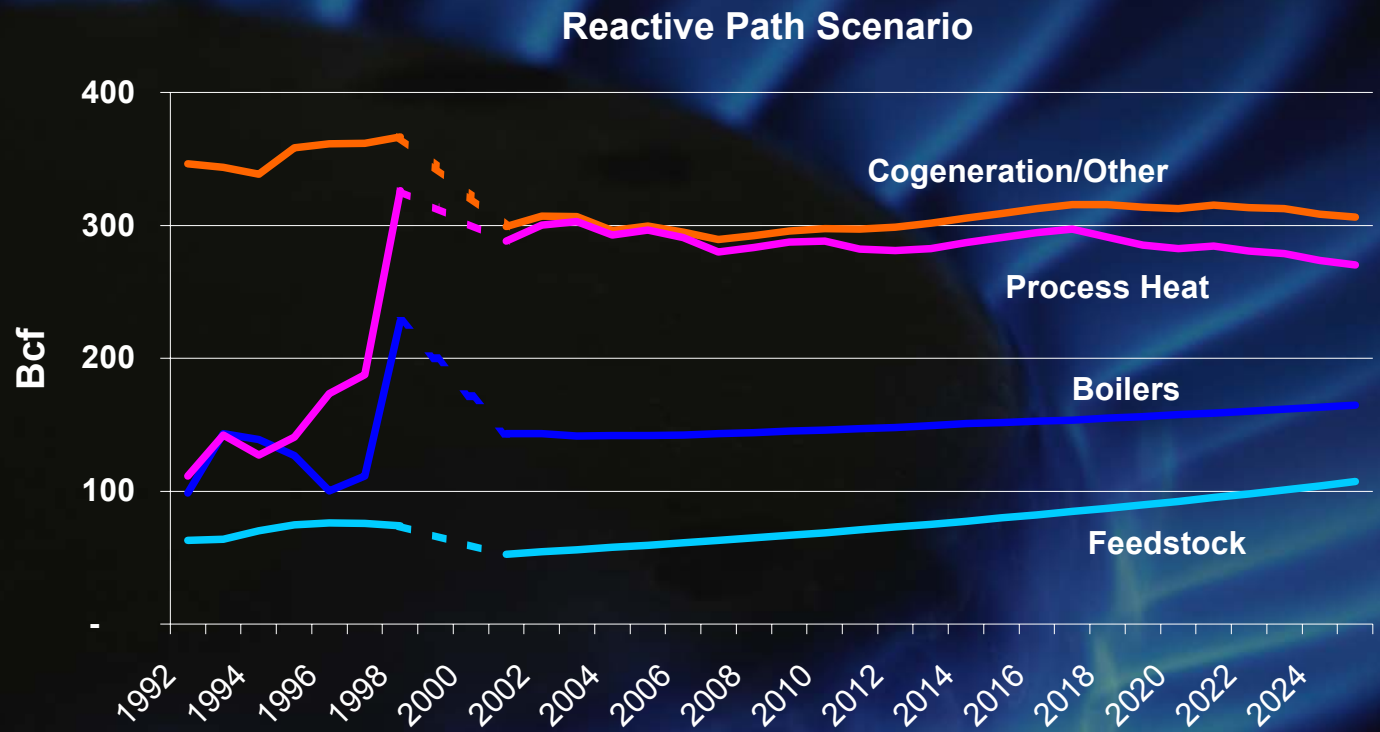
Pricing Impact vs.
Reactive Path, \$/MMBtu
(\$2002)

Higher Prices Impact Industrial Growth

Reactive Path



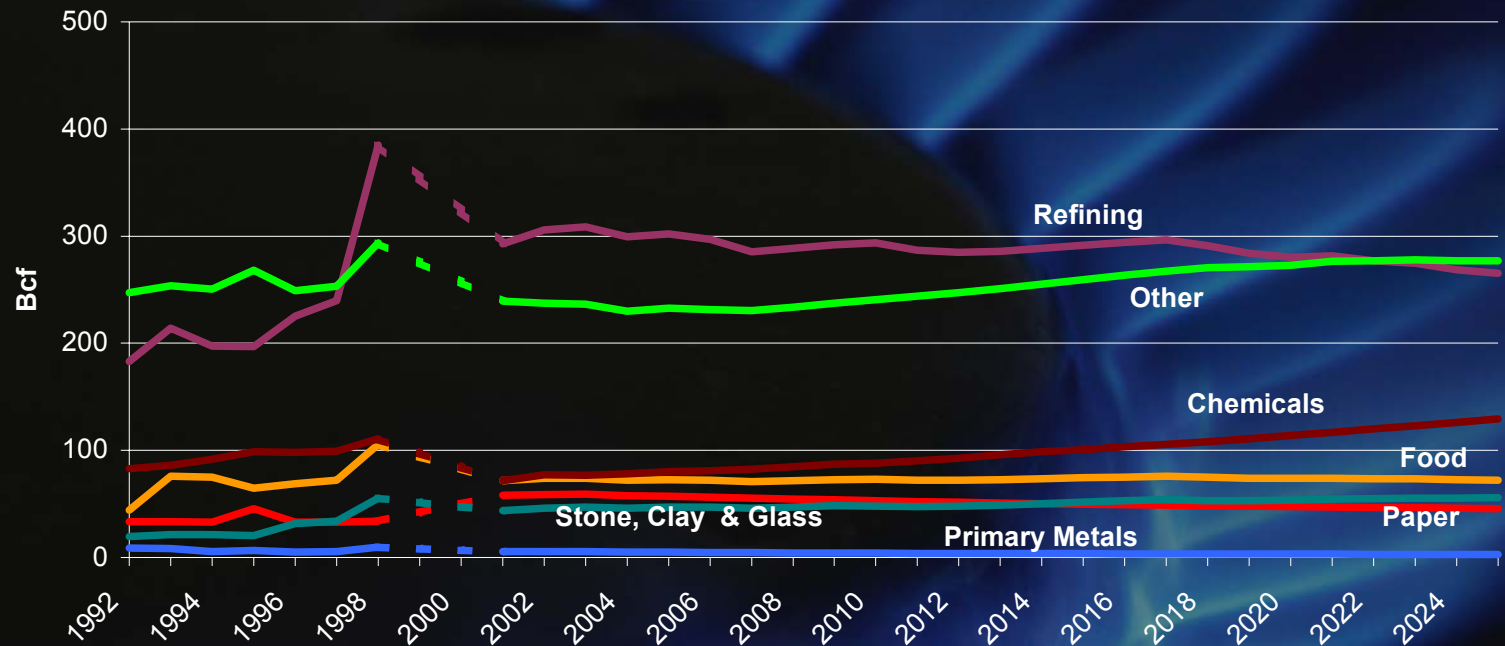
California Industrial Demand by End-Use



Note: 1999-2000 data approximated

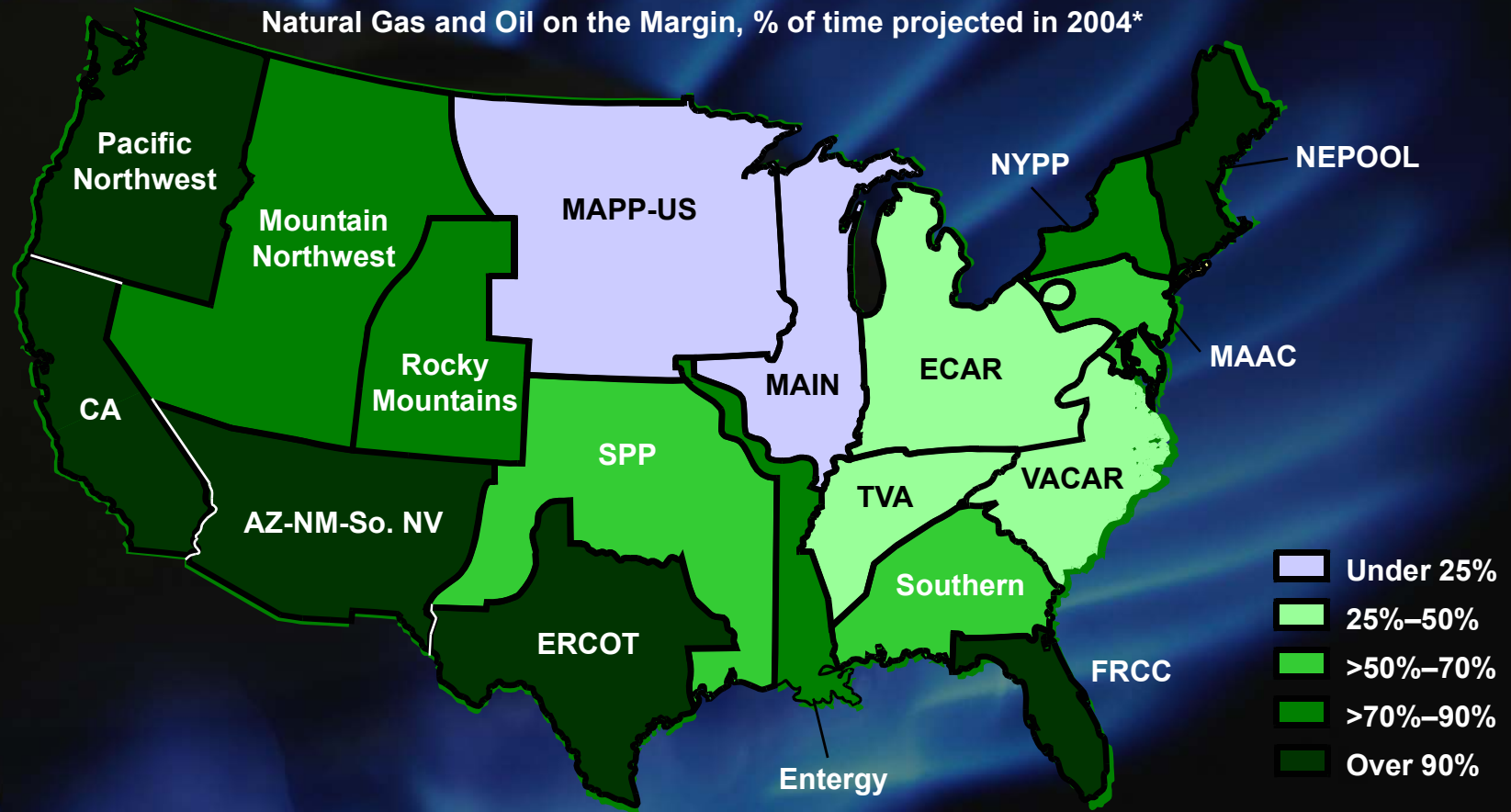
California Industrial Demand by Industry

Reactive Path Scenario



Note: 1999-2000 data approximated

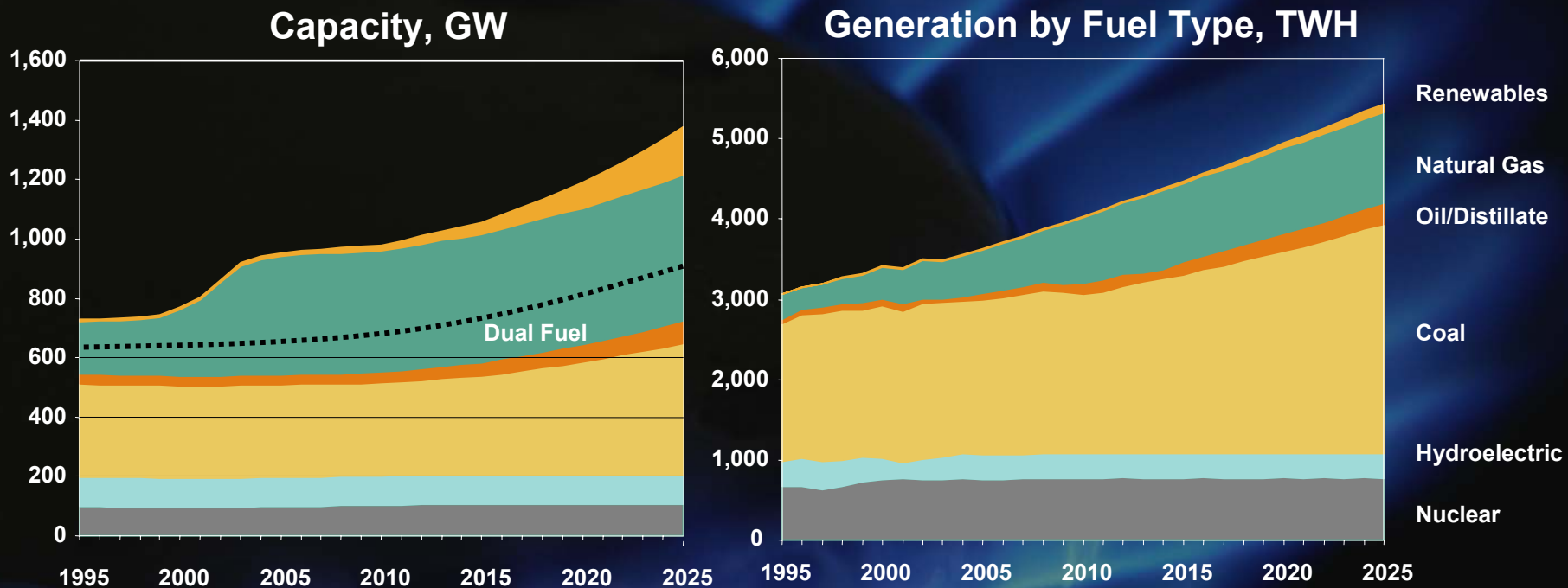
Natural Gas Has Grown in Importance for Power Generation



*Source: Cambridge Energy Research Associates

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The Gas-Fired Generation Buildup Has Reshaped Demand

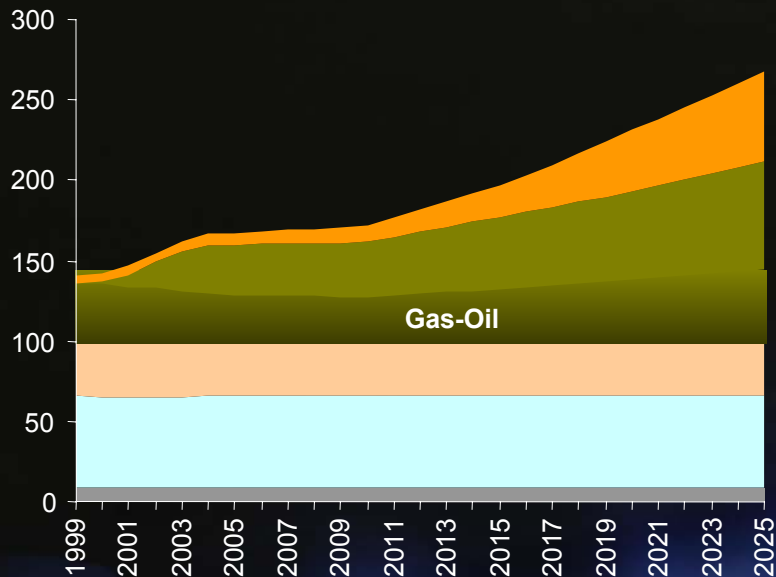


U.S. Figures Only

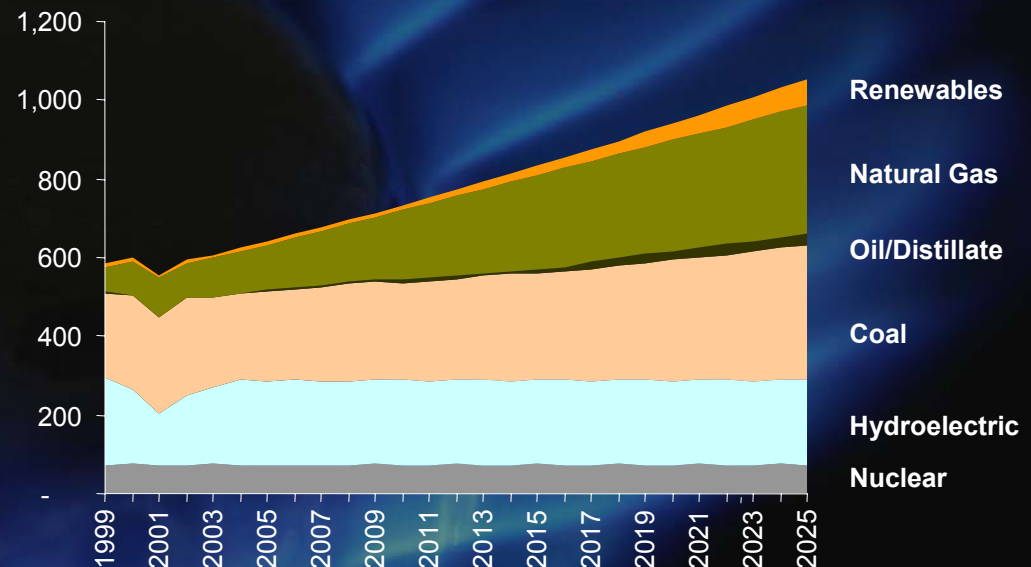
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Natural Gas is Growing in Importance for Power Generation in the Western U.S.

WECC Generation Capacity, GW

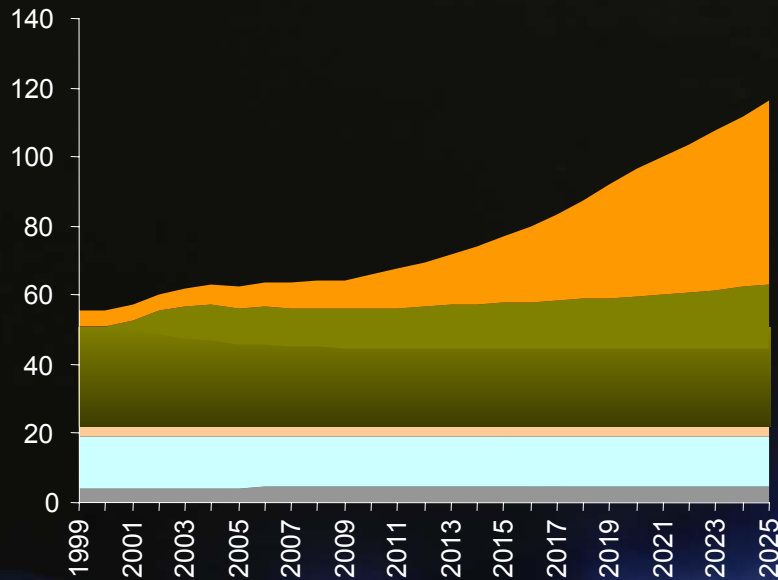


WECC Generation, TWH

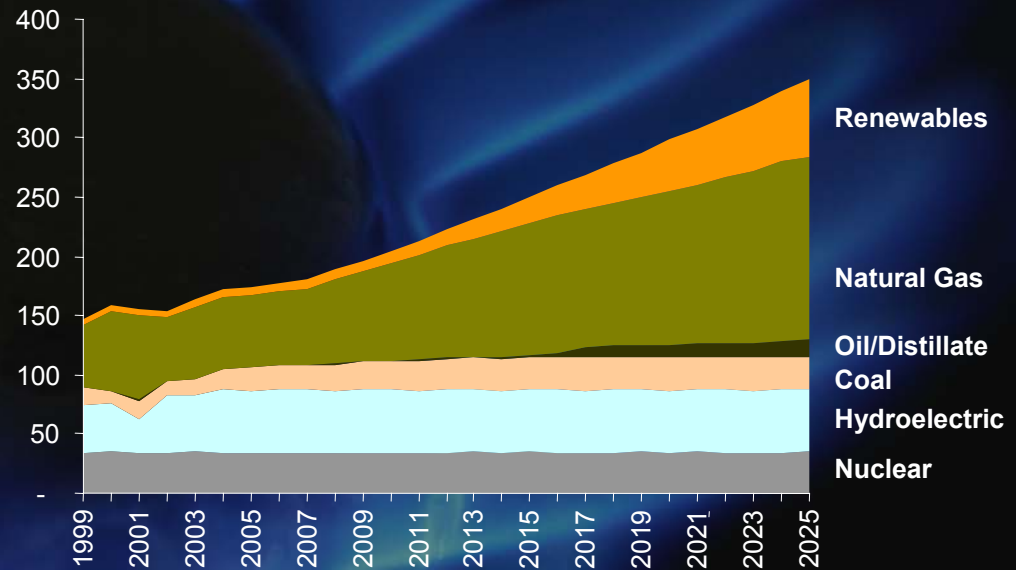


Natural Gas is the Most Significant Fuel for California Power Generation

Capacity, GW

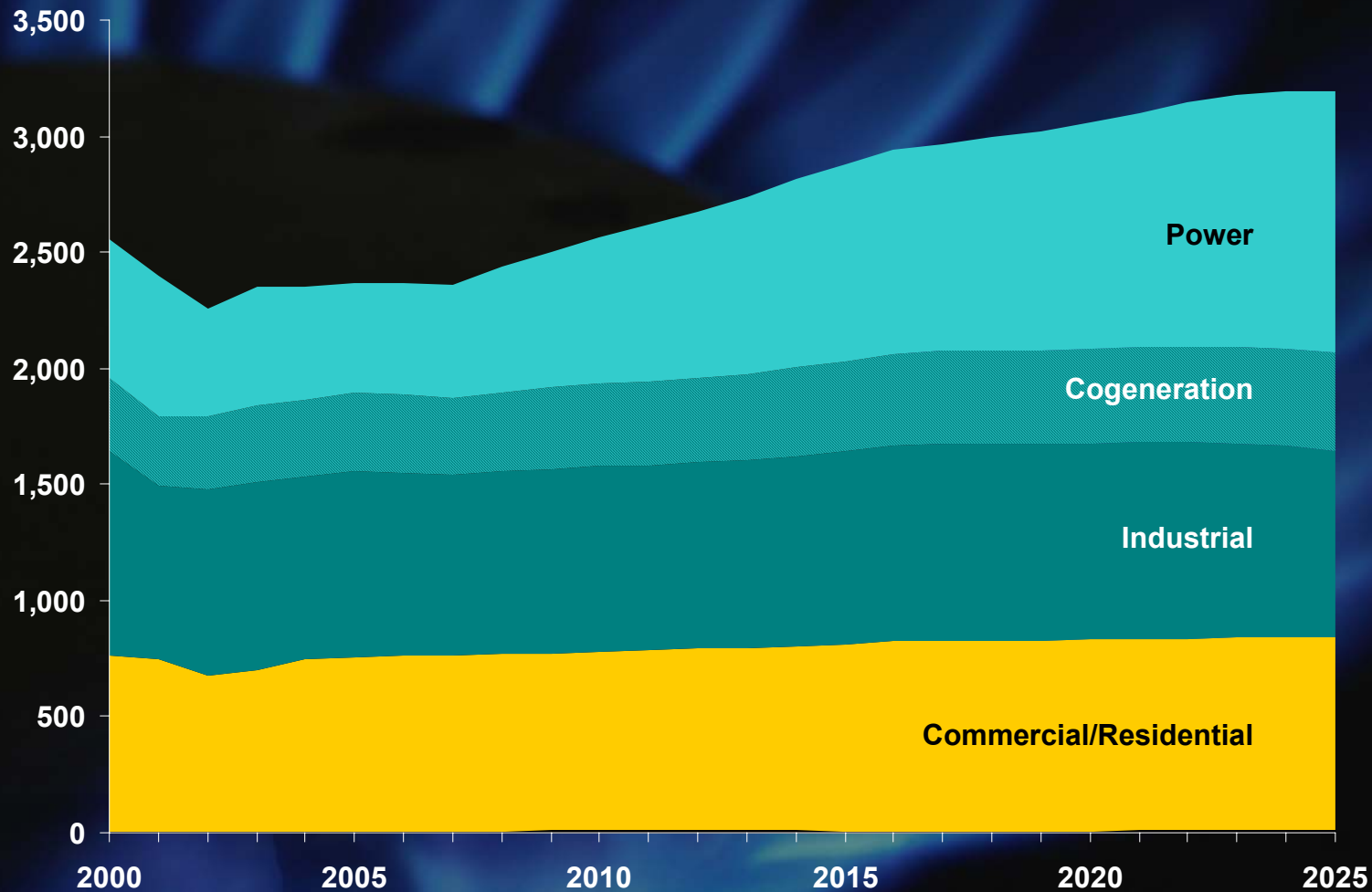


Generation, TWH

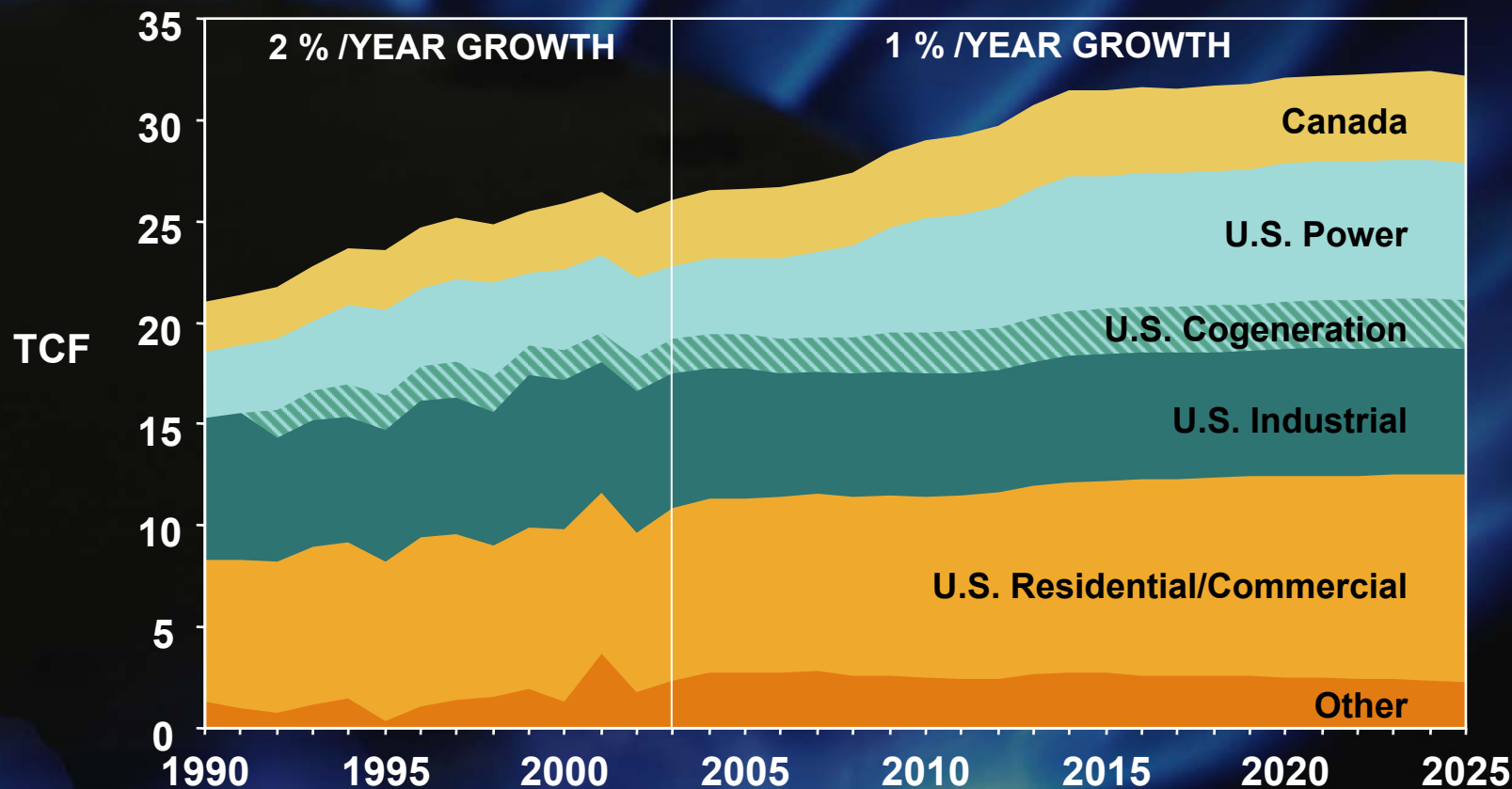


California Demand Projection

(Reactive Path, BCF)



North America: Demand Growth Will Moderate, While the Power Sector Drives Growth



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